MITSUBISHI ELECTRIC

Mr.SLIM

Air-Conditioners
SEZ-KA35, KA50, KA60, KA71VA

INSTALLATION MANUAL

FOR INSTALLER

For safe and correct use, please read this manual and outdoor unit installation manual thoroughly before installing the air-conditioner unit.

ΕΓΧΕΙΡΙΔΙΟ ΟΔΗΓΙΩΝ ΕΓΚΑΤΑΣΤΑΣΗΣ

Για σωστή και ασφαλή χρήση, διαβάστε προσεκτικά αυτό το εγχειρίδιο, καθώς και το εγχειρίδιο εγκατάστασης της εξωτερικής μονάδας, πριν από την εγκατάσταση τ

English

Ελληνικά

Contents

1. Safety precautions 2
2. Selecting the installation location 2
3. Installation diagram & Accessories 3
4. Indoor unit installation 4
5. Refrigerant piping work 4
6. Drainage piping work 6
7. Electrical work 6
8. Air filter installation 9
9. Duct work 11
10. Test run 11

1. Safety precautions

- **Please report to or take consent by the supply authority before connection to the system.**
- **Be sure to read "Safety precautions" before installing the air conditioner.**
- **Be sure to observe the cautions specified here as they include important items related to safety.**
- **The indications and meanings are as follows.**

⚠ Warning:
Could lead to death, serious injury, etc.

⚠ Caution:
Could lead to serious injury in particular environments when operated incorrectly.

- **After reading this manual, be sure to keep it together with the instruction manual in a handy place on the customer's site.**

⏚ : Indicates a part which must be grounded.

⚠ Warning:
Carefully read the labels affixed to the main unit.

⚠ Warning:

- **Do not install it by yourself (customer).**
  Incomplete installation could cause injury due to fire, electric shock, the unit falling or leakage of water. Consult the dealer from whom you purchased the unit or special installer.
- **Install the unit securely in a place which can bear the weight of the unit.**
  When installed in an insufficient strong place, the unit could fall causing injured.
- **Use the specified wires to connect the indoor and outdoor units securely and attach the wires firmly to the terminal board connecting sections so the stress of the wires is not applied to the sections.**
  Incomplete connecting and fixing could cause fire.
- **Do not use intermediate connection of the power cord or the extension cord and do not connect many devices to one AC outlet.**
  It could cause a fire or an electric shock due to defective contact, defective insulation, exceeding the permissible current, etc.
- **Check that the refrigerant gas does not leak after installation has completed.**
- **Perform the installation securely referring to the installation manual.**
  Incomplete installation could cause a personal injury due to fire, electric shock, the unit falling or leakage of water.
- **Perform electrical work according to the installation manual and be sure to use an exclusive circuit.**
  If the capacity of the power circuit is insufficient or there is incomplete electrical work, it could result in a fire or an electric shock.
- **Attach the electrical part cover to the indoor unit and the service panel to the outdoor unit securely.**
  If the electrical part cover in the indoor unit and/or the service panel in the outdoor unit are not attached securely, it could result in a fire or an electric shock due to dust, water, etc.
- **Be sure to use the part provided or specified parts for the installation work.**
  The use of defective parts could cause an injury or leakage of water due to a fire, an electric shock, the unit falling, etc.
- **Ventilate the room if refrigerant leaks during operation.**
  If the refrigerant comes in contact with a flame, poisonous gases will be released.

⚠ Caution:

- **Perform grounding.**
  Do not connect the ground wire to a gas pipe, water pipe arrester or telephone ground wire. Defective grounding could cause an electric shock.
- **Do not install the unit in a place where an inflammable gas leaks.**
  If gas leaks and accumulates in the area surrounding the unit, it could cause an explosion.
- **Install a ground leakage breaker depending on the installation place (where it is humid).**
  If a ground leakage breaker is not installed, it could cause an electric shock.
- **Perform the drainage/piping work securely according to the installation manual.**
  If there is a defect in the drainage/piping work, water could drop from the unit and household goods could be wet and damaged.
- **Fasten a flare nut with a torque wrench as specified in this manual.**
  When fastened too tight, a flare nut may broken after a long period and cause a leakage of refrigerant.

2. Selecting the installation location

2.1. Indoor unit

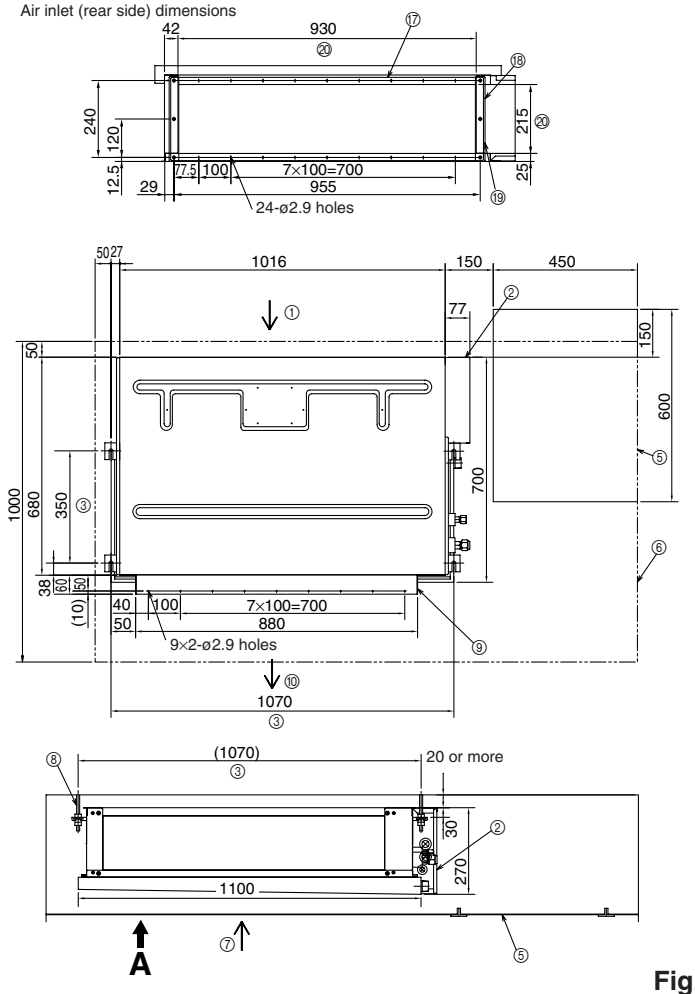
- Where airflow is not blocked.
- Where cool air spreads over the entire room.
- Where it is not exposed to direct sunshine.
- At a distance 1 m or more away from your TV and radio (to prevent picture from being distorted or noise from being generated).
- In a place as far away as possible from fluorescent and incandescent lights (so the infrared remote control can operate the air conditioner normally).
- Where the air filter can be removed and replaced easily.

⚠ Warning:
Mount the indoor unit into a ceiling strong enough to withstand the weight of the unit.

3. Installation diagram & Accessories

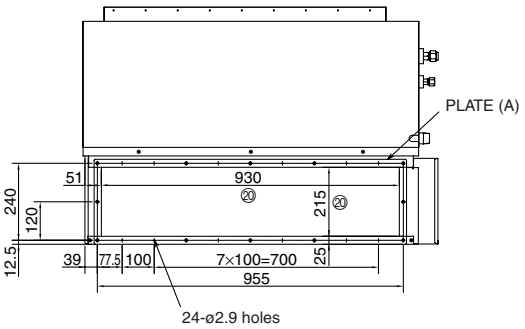
■ **SEZ-KA35/KA50/KA60/KA71VA**

Air inlet (rear side) dimensions



A (mm)

Air inlet (bottom side) dimensions



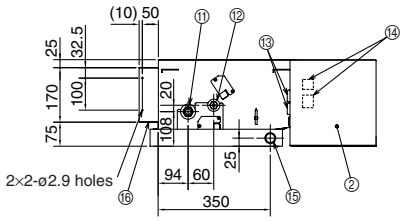


Fig. 3-1

3.1. Indoor unit (Fig. 3-1)

① Air inlet (rear side) *Select the either back side or bottom side
② Electrical parts box
③ Suspension bolt pitch
⑤ Access door
⑥ Service space (It is necessary to maintain a working service area from the ceiling.)
⑦ Air inlet (bottom side) *Select the either back side or bottom side
⑧ Suspension bolt M10 or 3/8 (procure locally)
⑨ Air outlet duct flange
⑩ Air outlet
⑪ Refrigerant pipe (gas)
⑫ Refrigerant pipe (liquid)
⑬ Wiring entry
⑭ Terminal block
⑮ Drain plug R1
⑯ Air outlet duct flange
⑰ In case of bottom side suction, mount the PLATE (A) on the rear side.
⑱ After installation, remove the transportation support PLATE (B).
⑲ PLATE (B) × 2
⑳ Inlet size

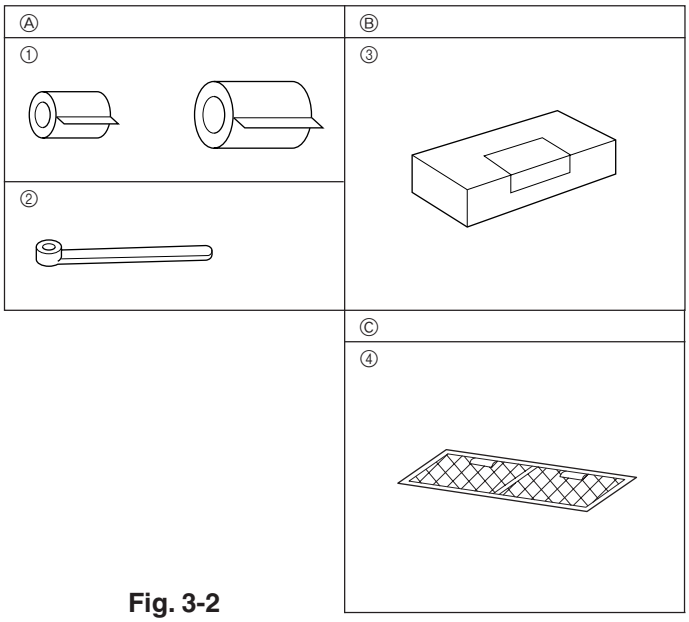


Fig. 3-2

3.2. Checking the indoor unit accessories (Fig. 3-2)

Check that the indoor unit is equipped with the following parts and accessories:

Ⓐ Refrigerant pipe parts

① Pipe cover (for refrigerant piping joint)
Small diameter × 1
Large diameter × 1
② Bands for temporary tightening of pipe cover × 4

Ⓑ Remote controller parts

③ Parts contained in the cardboard box × 1
Check the contents and read the explanations provided.

Ⓒ Air filter parts

④ Parts contained in the bag × 1
Check the contents and read the explanations provided.

Refrigerant and drainage pipe sizes

Model		SEZ-KA35VA	SEZ-KA50VA	SEZ-KA60VA	SEZ-KA71VA
Refrigerant pipe	Liquid	OD ø6.35 (1/4")	OD ø6.35 (1/4")	OD ø6.35 (1/4")	OD ø9.52 (3/8")
	Gas	OD ø9.52(3/8")	OD ø12.7 (1/2")	OD ø15.88 (5/8")	OD ø15.88 (5/8")
Drainage pipe		Hard PVC pipe : OD ø26 (1")			

4. Indoor unit installation

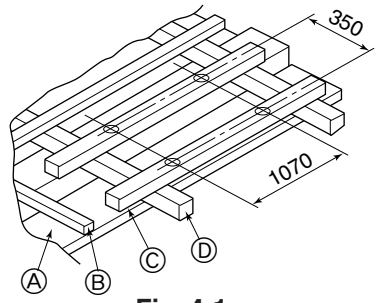


Fig. 4-1

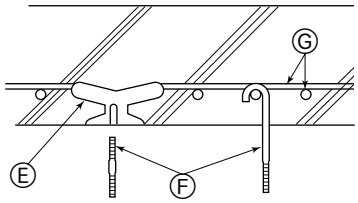


Fig. 4-2

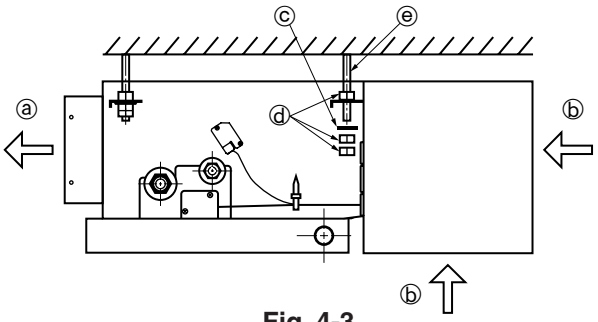


Fig. 4-3

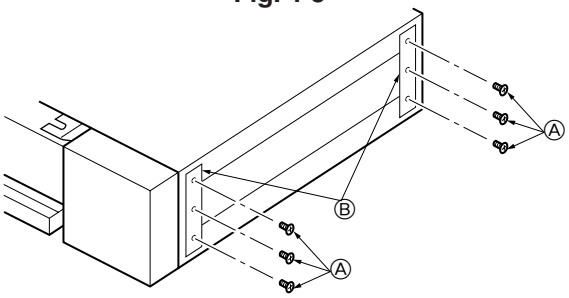


Fig. 4-4

4.1. Suspension Structure (Give site of suspension strong structure.)

4.1.1. Wooden structure (Fig. 4-1)

- Select tie beam (one-story houses) or second-floor girder (two-story houses) as reinforcement member.
- Use sturdy beams of at least 6 cm square for beam pitch of 90 cm or less or of at least 9 cm square for beam pitch of 90-180 cm.

Ⓐ Ceiling
Ⓑ Rafter
Ⓒ Beam
Ⓓ Roof beam

4.1.2. Ferroconcrete structures (Fig. 4-2)

Secure the suspension bolts using the method shown, or use steel or wooden hangers, etc. to install the suspension bolts.

Ⓔ Use inserts rated at 100-150 kg each (procure locally)
Ⓕ Suspension bolts M10 (3/8") (procure locally)
Ⓖ Steel reinforcing rod

4.1.3. Installing the suspension bolts

- Check the pitch of the suspension bolts.
- Use the ø10 (3/8") suspension bolts (×4, procure locally).
- Adhere strictly to the length of the suspension bolts.

4.2. Suspending the unit (Fig. 4-3)

Direct suspension method:

Raise the unit and line it up with the suspension bolts, then secure it using both nuts.

ⓐ Air outlet
ⓑ Air intake (selecting the either back side or bottom side.)
ⓒ Washer (procure locally)
ⓓ Nuts (procure locally)
ⓔ Suspension bolts (procure locally)

4.3. Transportation support removal (Fig. 4-4)

After installation, completely remove the transportation support because this part should only be used during transportation.

Ⓐ 3 screws
Ⓑ Transportation support

5. Refrigerant piping work

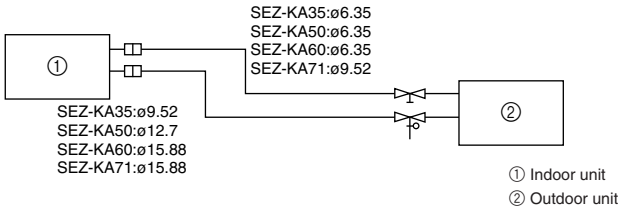


Fig. 5-1

5.1. Refrigerant pipe (Fig. 5-1)

Piping preparation

- Refrigerant pipes of 3, 5, 7, 10 and 15 m are available as optional items.

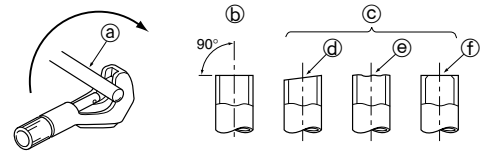
(1) Table below shows the specifications of pipes commercially available.

Model	Pipe	Outside diameter		Min. wall thickness	Insulation thickness	Insulation material
		mm	inch			
SEZ-KA35VA	For liquid	6.35	1/4	0.8 mm	8 mm	Heat resisting foam plastic 0.045 specific gravity
	For gas	9.52	3/8	0.8 mm	8 mm	
SEZ-KA50VA	For liquid	6.35	1/4	0.8 mm	8 mm	
	For gas	12.7	1/2	0.8 mm	8 mm	
SEZ-KA60VA	For liquid	6.35	1/4	0.8 mm	8 mm	
	For gas	15.88	5/8	1.0 mm	8 mm	
SEZ-KA71VA	For liquid	9.52	3/8	0.8 mm	8 mm	
	For gas	15.88	5/8	1.0 mm	8 mm	

(2) Ensure that the 2 refrigerant pipes are well insulated to prevent condensation.
(3) Refrigerant pipe bending radius must be 10 cm or more.

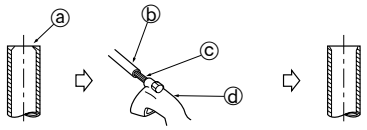
⚠ **Caution:**
Using careful insulation of specified thickness. Excessive thickness prevents storage behind the indoor unit and smaller thickness causes dew drippage.

5. Refrigerant piping work



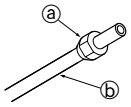
ⓐ Copper tubes
ⓑ Good
ⓒ No good
ⓓ Tilted
ⓔ Uneven
ⓕ Burred

Fig. 5-2



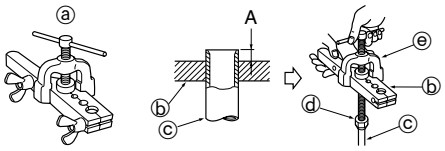
ⓐ Burr
ⓑ Copper tube/pipe
ⓒ Spare reamer
ⓓ Pipe cutter

Fig. 5-3



ⓐ Flare nut
ⓑ Copper tube

Fig. 5-4



ⓐ Flaring tool
ⓑ Die
ⓒ Copper tube
ⓓ Flare nut
ⓔ Yoke

Fig. 5-5

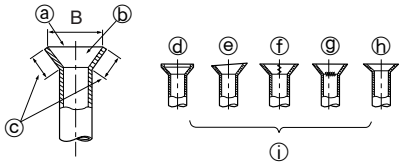


Fig. 5-6

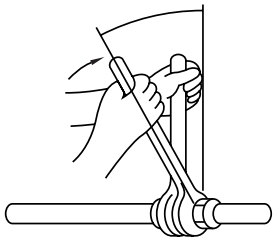
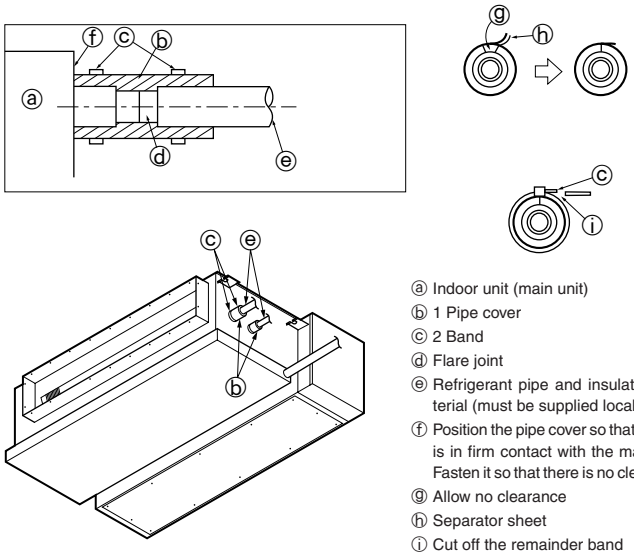


Fig. 5-7



ⓐ Indoor unit (main unit)
ⓑ 1 Pipe cover
ⓒ 2 Band
ⓓ Flare joint
ⓔ Refrigerant pipe and insulating material (must be supplied locally)
ⓕ Position the pipe cover so that the end is in firm contact with the main unit. Fasten it so that there is no clearance.
ⓖ Allow no clearance
ⓗ Separator sheet
ⓘ Cut off the remainder band

Fig. 5-8

5.2. Flaring work

- Main cause of gas leakage is defect in flaring work.
  Carry out correct flaring work in the following procedure.

5.2.1. Pipe cutting (Fig. 5-2)

- Using a pipe cutter cut the copper tube correctly.

5.2.2. Burrs removal (Fig. 5-3)

- Completely remove all burrs from the cut cross section of pipe/tube.
- Put the end of the copper tube/pipe to downward direction as you remove burrs in order to avoid burrs drop in the tubing.

5.2.3. Putting nut on (Fig. 5-4)

- Remove flare nuts attached to indoor and outdoor unit, then put them on pipe/tube having completed burr removal.
  (not possible to put them on after flaring work)

5.2.4. Flaring work (Fig. 5-5)

- Carry out flaring work using flaring tool as shown at the right.

Pipe diameter (mm)	Dimension	
	A (mm)	$B^{+0}_{-0.4}$ (mm)
	When the tool for R410A is used	
	Clutch type	
6.35	0 - 0.5	9.1
9.52	0 - 0.5	13.2
12.7	0 - 0.5	16.6
15.88	0 - 0.5	19.7

Firmly hold copper tube in a die in the dimension shown in the table at above.

5.2.5. Check (Fig. 5-6)

- Compare the flared work with a figure in right side hand.
- If flare is noted to be defective, cut off the flared section and do flaring work again.

ⓐ Smooth all around
ⓑ Inside is shining without any scratches
ⓒ Even length all around
ⓓ Too much
ⓔ Tilted
ⓕ Scratch on flared plane
ⓖ Cracked
ⓗ Uneven
ⓘ Bad examples

5.3. Pipe connection (Fig.5-7)

- Apply a thin coat of refrigeration oil on the seat surface of pipe.
- For connection first align the center, then tighten the first 3 to 4 turns of flare nut.
- Use tightening torque table below as a guideline for indoor unit side union joint section, and tighten using two wrenches. Excessive tightening damages the flare section.

Copper pipe O.D. (mm)	Flare nut O.D. (mm)	Tightening torque (N·m)
ø6.35	17	14 - 18
ø9.52	22	34 - 42
ø12.7	26	49 - 61
ø15.88	29	68 - 82

⚠ Warning:
Be careful of flying flare nut! (Internally pressurized)
Remove the flare nut as follows:

1. **Loosen the nut until you hear a hissing noise.**
2. **Do not remove the nut until the gas has been completely released (i.e., hissing noise stops).**
3. **Check that the gas has been completely released, and then remove the nut.**

Outdoor unit connection

Connect pipes to stop valve pipe joint of the outdoor unit in the same manner applied for indoor unit.

- For tightening use a torque wrench or spanner, and use the same tightening torque applied for indoor unit.

Refrigerant pipe insulation (Fig. 5-8)

(1) Peel the separator sheet off the accompanying pipe cover, and wrap it around the refrigerant pipe, making sure that the side which is slit faces upwards.
(2) Be sure to fix both ends of the pipe cover using an attachment band (ensure that the band's joint faces upwards).
(3) Stick vinyl tape on the joint positions.

6. Drainage piping work

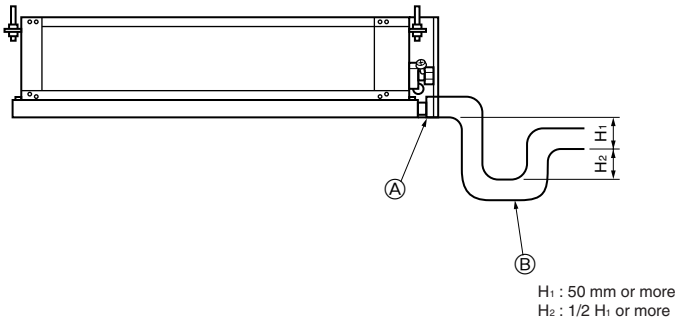


Fig. 6-1

6.1. Drainage pipe connection (Fig. 6-1)

Indoor unit's drainage pipe

- The drainage pipe should be arranged so that the discharge end is lower than the other end, as shown in the figure opposite.
- Place the trap outside the unit.
- After connecting the drainage pipe, make sure that water is discharged properly and that there are no leaks.

Ⓐ Drainage piping connection 1 RP male.
Ⓑ Trap

Outdoor unit drainage pipe connection

When drainage piping is necessary, use the drain pan (supplied as an option).

7. Electrical work

(1) SEZ-KA35, KA50, KA60, KA71VA

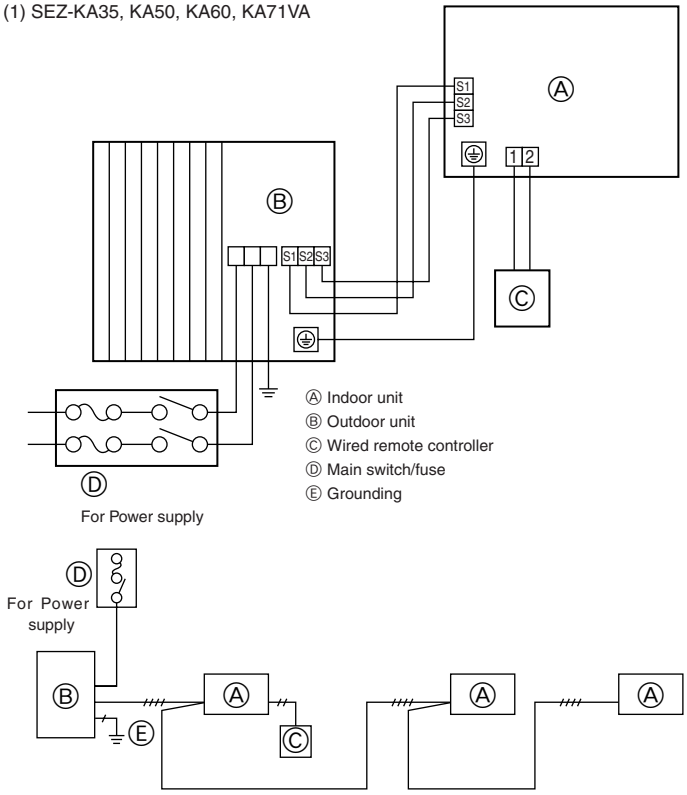


Fig. 7-1

7.1. Precautions (Fig. 7-1)

Electrical specification	Input capacity Main Switch/Fuse (A)			
Power supply	SEZ-KA35	SEZ-KA50	SEZ-KA60	SEZ-KA71
(1 phase ~/N, 230V, 50Hz)	10	20	20	20

- The compressor will not operate unless the power supply phase connection is correct.
- Grounding protection with a no-fuse breaker (earth leakage breaker [ELB]) is usually installed for Ⓓ.
- The connection wiring between the outdoor and indoor units can be extended up to a maximum of 50 meters, and the total extension including the crossover wiring between rooms is a maximum of 80 m.

A switch with at least 3.5 mm contact separation in each pole shall be provided by the air conditioner installation.

* Label each breaker according to purpose (heater, unit etc.).

7. Electrical work

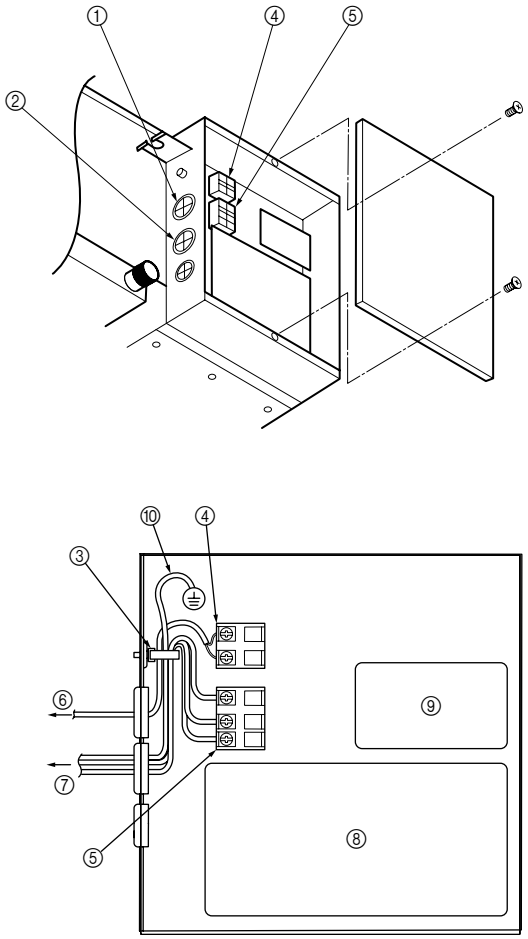


Fig. 7-2

7.2. Indoor wire connection (Fig. 7-2)

Work procedure

1.Remove 2 screws to detach the electric component cover.
2.Route each cable through the wiring intake into the electric component box. (Procure power cable and in-out connecting cable locally and use remote control cable supplied with the unit.)
3.Securely connect the power cable and the in-out connecting cable and the remote control cable to the terminal blocks.
4.Secure the cables with clamps inside the electric component box.
5.Attach the electric component cover as it was.

- Fix power supply cable and indoor/outdoor cable to control box by using buffer bushing for tensile force. (PG connection or the like.)

⚠ Warning:

- **Attach the electrical part cover securely. If it is attached incorrectly, it could result in a fire, electric shock due to dust, water, etc.**
- **Use the specified indoor/outdoor unit connecting wire to connect the indoor and outdoor units and fix the wire to the terminal bed securely so that no stress is applied to the connecting section of the terminal bed. Incomplete connection or fixing of the wire could result in a fire.**
- **The wiring configuration of the indoor unit's fan motor is for a 50 Hz power supply. The wiring must be reconfigured if a 60 Hz power supply is used. Refer to the wiring diagram for details.**

① Entry for wired remote controller cable
② Entry for Indoor-Outdoor connecting cable
③ Cable clamp
④ Remote controller terminal
⑤ Indoor/Outdoor unit connecting terminal
⑥ To wired remote controller
⑦ To outdoor unit
⑧ Indoor controller
⑨ Power board
⑩ Earth cable

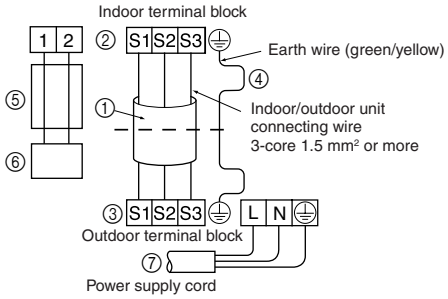


Fig. 7-3

- Perform wiring as shown in the diagram to the lower left. (Procure the cable locally). (Fig. 7-3)
  Make sure to use cables of the correct polarity only.
  ① Connecting cable
  Cable 3-core 1.5 mm², in conformity with Design 245 IEC 57.
  ② Indoor terminal block
  ③ Outdoor terminal block
  ④ Always install an earth wire (1-core 1.5 mm²) longer than other cables
  ⑤ Remote controller cable (non-polar)
  Cable 2-core 0.3 mm²
  The 10 m wire is attached in the remote controller accessory. Max. 500 m
  ⑥ Wired remote controller
  ⑦ Power supply cord

⚠ Caution:

- **Use care not to make miswiring.**
- **Firmly tighten the terminal screws to prevent them from loosening.**
- **After tightening, pull the wires lightly to confirm that they do not move.**

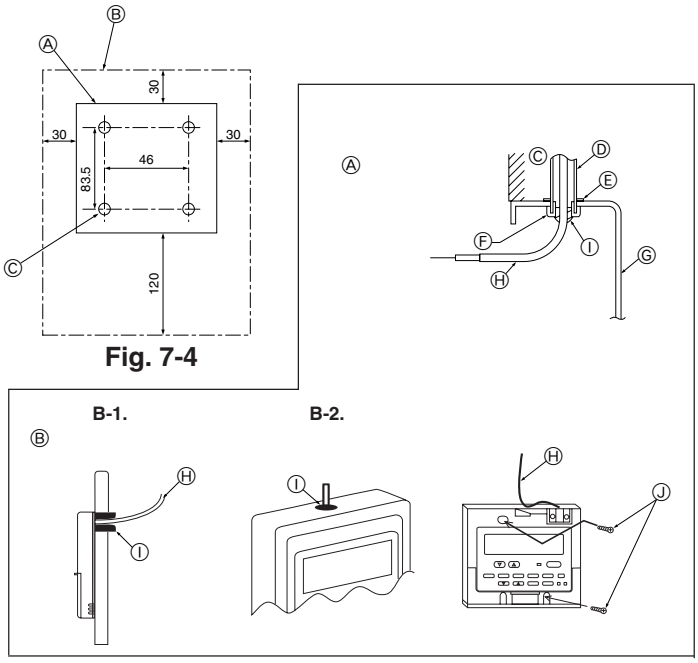


Fig. 7-4

Fig. 7-5

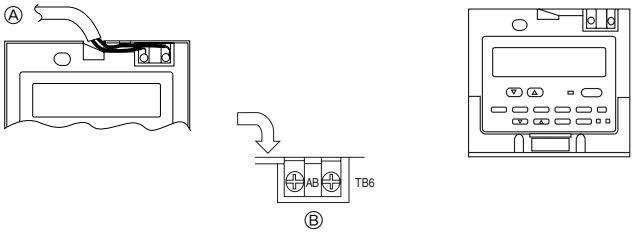


Fig. 7-6

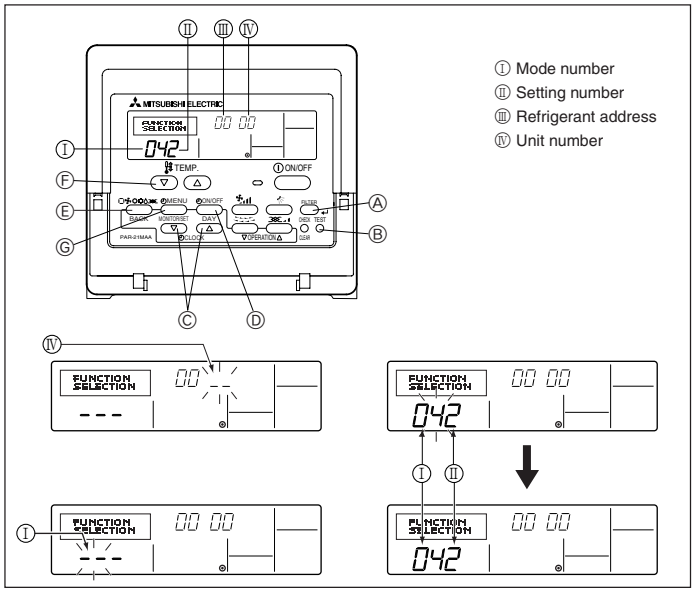


Fig. 7-7

7.3. Remote controller

7.3.1. For wired remote controller

1) Installing procedures

(1) Select an installing position for the remote controller. (Fig. 7-4)
The temperature sensors are located on both remote controller and indoor unit.

▶ **Procure the following parts locally:**
Two piece switch box
Thin copper conduit tube
Lock nuts and bushings
Ⓐ Remote controller profile
Ⓑ Required clearances surrounding the remote controller
Ⓒ Installation pitch

(2) Seal the service entrance for the remote controller cord with putty to prevent possible invasion of dew drops, water, cockroaches or worms. (Fig. 7-5)
Ⓐ For installation in the switch box:
Ⓑ For direct installation on the wall select one of the following:
- Prepare a hole through the wall to pass the remote controller cord (in order to run the remote controller cord from the back), then seal the hole with putty.
- Run the remote controller cord through the cutout in the upper case, then seal the cutout notch with putty similarly as above.

B-1. To lead the remote controller cord from the back of the controller:
B-2. To run the remote controller cord through the upper portion:

(3) For direct installation on the wall

Ⓒ Wall	Ⓖ Switch box
Ⓓ Conduit	Ⓗ Remote controller cord
Ⓔ Lock nut	Ⓘ Seal with putty
Ⓕ Bushing	Ⓙ Wood screw

2) Connecting procedures (Fig. 7-6)

① Connect the remote controller cord to the terminal block.
Ⓐ To the terminal block on the indoor unit
Ⓑ TB6 (No polarity)
② Set the dip switch No.1 shown below when using two remote controller's for the same group.
Ⓒ Dip switches

3) Function selection of remote controller

If two remote controllers are connected, set one to "Main" and the other to "Sub". For setting procedures, refer to "Function selection of remote controller" in the operation manual for the indoor unit.

7.4. Function settings

7.4.1 Function setting on the unit (Selecting the unit functions)

1) AUTO RESTART FUNCTION

Indoor controller board

This model is equipped with the AUTO RESTART FUNCTION.
(the DIP switch on the indoor controller board)
When the indoor unit is controlled with the remote controller, the operation mode, set temperature, and the fan speed are memorized by the indoor controller board. The auto restart function sets to work the moment the power has restored after power failure, then, the unit will restart automatically.

SW3

1				5	ON
	2	3	4		OFF

Power failure automatic recovery

OFF : Not available
ON : Available (Initial setting)
* When the power supply returns, the air conditioner will start 3 minutes later.

2) Other functions

For wired remote controller only (Fig. 7-7)

Changing the power voltage setting
- Be sure to change the power voltage setting depending on the voltage used.

① Go to the function setting mode.
Switch OFF the remote controller.
Press the Ⓐ and Ⓑ buttons simultaneously and hold them for at least 2 seconds. FUNCTION will start to flash.
② Use the Ⓒ button to set the refrigerant address (Ⅲ) to 00.
③ Press Ⓓ and [--] will start to flash in the unit number (Ⅳ) display.
④ Use the Ⓒ button to set the unit number (Ⅳ) to 00.
⑤ Press the Ⓔ MODE button to designate the refrigerant address/unit number. [--] will flash in the mode number (Ⅰ) display momentarily.
⑥ Press the Ⓕ buttons to set the mode number (Ⅰ) to 04.
⑦ Press the Ⓖ button and the current set setting number (Ⅱ) will flash.
Use the Ⓕ button to switch the setting number in response to the power supply voltage to be used.
Power supply voltage
240 V : setting number = 1
220 V, 230 V : setting number = 2
⑧ Press the MODE button Ⓔ and mode and the setting number (Ⅰ) and (Ⅱ) will change to being on constantly and the contents of the setting can be confirmed.
⑨ Press the FILTER Ⓐ and TEST RUN Ⓑ buttons simultaneously for at least two seconds. The function selection screen will disappear momentarily and the air conditioner OFF display will appear.

7. Electrical work

Function table

Select unit number 00

Mode	Settings	Mode no.	Setting no.	Initial setting	Setting
Power failure automatic recovery*1 (AUTO RESTART FUNCTION)	Not available	01	1	*1	
	Available		2	*1	
Indoor temperature detecting	Indoor unit operating average	02	1	○	
	Set by indoor unit's remote controller		2		
	Remote controller's internal sensor		3		
LOSSNAY connectivity	Not Supported	03	1	○	
	Supported (indoor unit is not equipped with outdoor-air intake)		2		
	Supported (indoor unit is equipped with outdoor-air intake)		3		
Power voltage	240 V	04	1		
	220 V, 230 V		2	○	
Auto mode (only for PUHZ)	Energy saving cycle automatically enabled	05	1	○	
	Energy saving cycle automatically disabled		2		

Select unit numbers 01 to 03 or all units (AL [wired remote controller]/07 [wireless remote controller])

Mode	Settings	Mode no.	Setting no.	Initial setting	Setting
Filter sign	100 Hr	07	1		
	2500 Hr		2		
	No filter sign indicator		3	○	
Fan speed	Standard (PLH/PLA)/Silent (PCH/PCA)	08	1	–	
	High ceiling ① (PLH/PLA)/Standard (PCH/PCA)		2		
	High ceiling ② (PLH/PLA)/High ceiling (PCH/PCA)		3		
No. of air outlets	4 directions	09	1	–	
	3 directions		2		
	2 directions		3		
Installed options (high-performance filter)	Not supported	10	1	–	
	Supported		2	–	
Up/down vane setting	No vanes	11	1	–	
	Equipped with vanes (vanes angle setup ①)		2		
	Equipped with vanes (vanes angle setup ②)		3		
Energy saving air flow (Heating mode)	Disabled	12	1	–	
	Enabled		2	–	

*1 For this model, mode no. 1 cannot be set using the remote controller. Set this mode using DIP switch SW3-1 of the indoor controller board.

8. Air filter installation

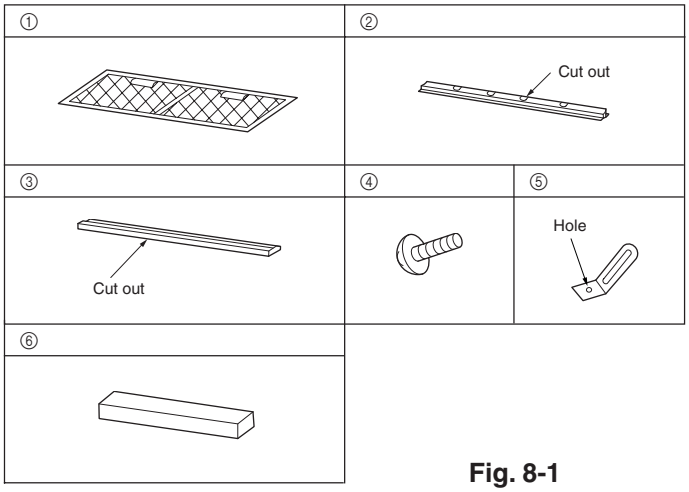


Fig. 8-1

8.1. Confirmation of enclosed parts (Fig. 8-1)

- Please ensure all the parts shown below are present before starting installation.
  - ① Filter × 1
  - ② Filter rail × 1
  - ③ Filter rail × 1
  - ④ ST. screw (4 × 10) × 14
  - ⑤ Clamp × 2
  - ⑥ Seal × 2

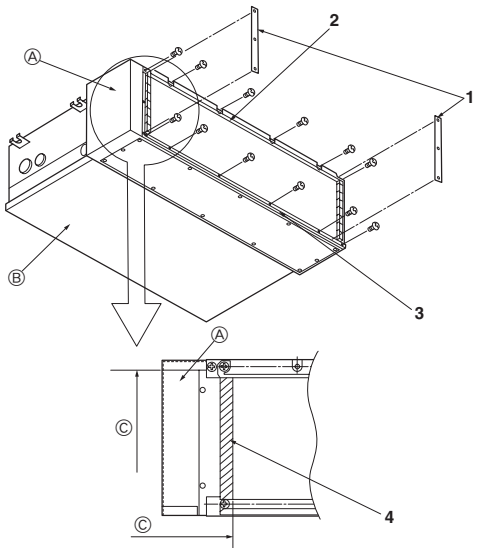


Fig. 8-2

8.2. Filter rail installation (Rear air intake) (Fig. 8-2)

■ Please select air intake direction A or B

1. Transportation support remove (Throw away).
2. Please attach filter rail ② as per the diagram (screw × 6).
   Please connect rails ② ③ carefully.
3. Please attach filter rail ③ as per the diagram (screw × 6).
   Please connect rails ② ③ carefully.
4. Seal ⑥
   Upright position here.
   - Ⓐ Control box
   - Ⓑ Drain pan
   - Ⓒ Air tight seal
     Level with edge

8. Air filter installation

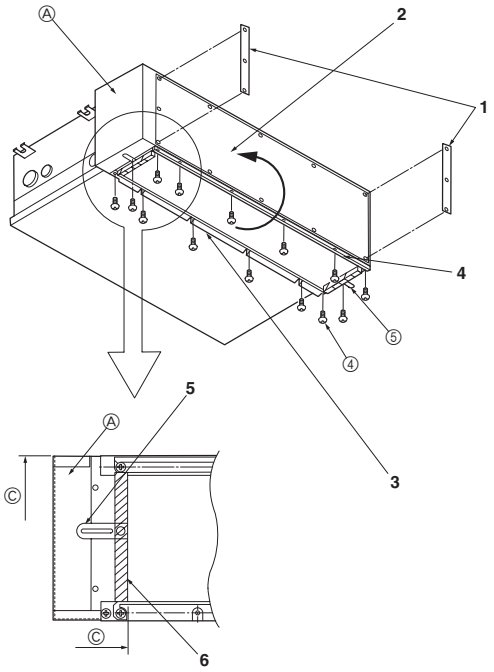


Fig. 8-3

8.3. Filter rail installation (Bottom air intake) (Fig. 8-3)

1. Transportation support remove (Throw away).
2. Please move the plate position. (Please use the screws removed.)
3. Please attach filter rail ② as per the diagram (screw × 6).
   Please connect rails ② ③ carefully.
4. Please attach filter rail ③ as per the diagram (screw × 6).
   Please connect rails ② ③ carefully.
5. Clamp ⑤ (Attach the clamps ⑤ with screw × 2)
   Upright position here.
6. Seal ⑥
   Upright position here.

Ⓐ Control box
Ⓒ Air tight seal
Level with edge

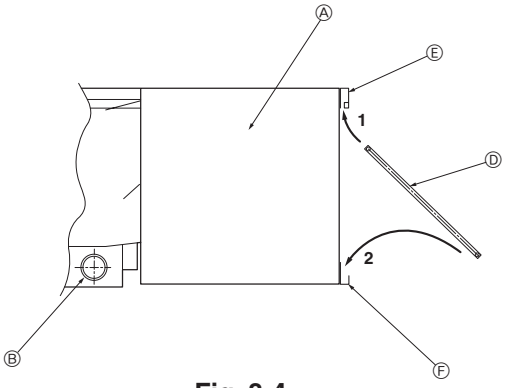


Fig. 8-4

8.4. Filter installation points (Rear air intake) (Fig. 8-4)

1. Insert the filter into rail ②
2. Hook the filter onto rail ③

Ⓐ Control box
Ⓑ Drain pan
Ⓓ Filter
Ⓔ Rail ②
Ⓕ Rail ③

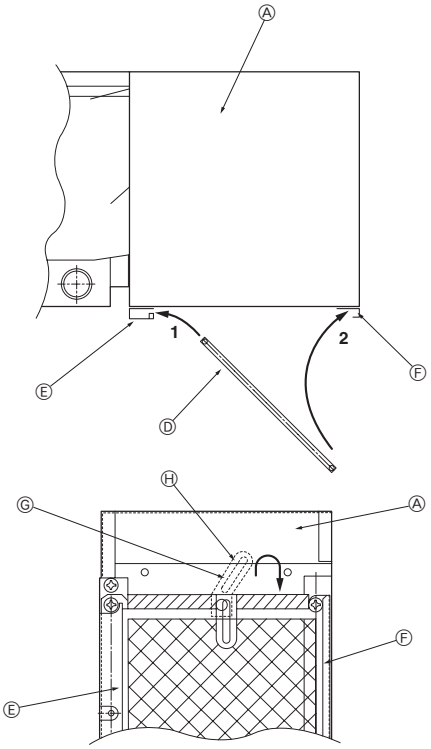


Fig. 8-5

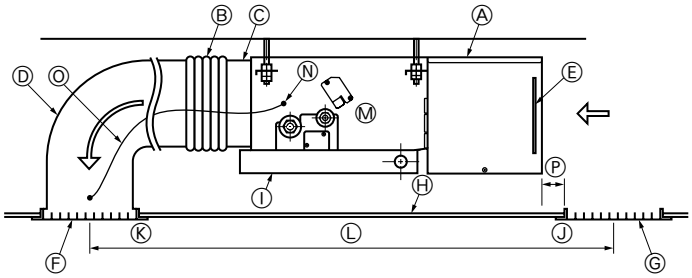
8.5. Filter installation points (Bottom air intake) (Fig. 8-5)

1. Insert the filter into rail ②
2. Hook the filter onto rail ③
3. Bend the clamp to hold the filter.

Ⓐ Control box
Ⓓ Filter ①
Ⓔ Rail ②
Ⓕ Rail ③
Ⓖ Bend
Ⓗ Clamp ⑤

9. Duct work

In case of rear-side suction



In case of bottom-side suction

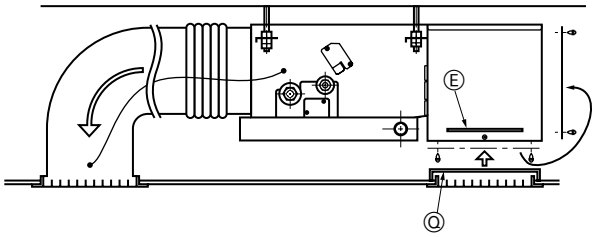


Fig. 9-1

Use the canvas duct for connecting the indoor unit and the duct. (Fig. 9-1)
Use fireproof material for the duct parts.
Make sure that the duct has sufficient heat insulation.

Ⓐ Electrical parts box
Ⓑ Canvas duct
Ⓒ Air outlet flange
Ⓓ Air outlet duct
Ⓔ Filter (Accessory)
Ⓕ Air outlet grille
Ⓖ Air intake grille
Ⓗ Ceiling
Ⓘ Drainage pan
Ⓙ Air intake
Ⓚ Air outlet
Ⓛ Allow clearance to avoid short cycling.
Ⓜ Indoor unit
Ⓝ Earth terminal
Ⓞ Earth cable
Ⓟ 850 mm or more
Ⓠ Safety net (procured locally)

Notes:

- **The fan and motor are dangerous if handled during operation. For this reason, be sure to install the indoor unit at least 850 mm from the air intake grill Ⓖ.**
  If it is not possible to put more than 850 mm of distance between the air intake grill and the indoor unit, install the safety net Ⓠ (locally procured).
- **Connect the main body of the air conditioner and the duct so that their potentials are equal.**
- **Connect an earth cable Ⓞ from the air outlet flange Ⓒ to the earth terminal Ⓝ. Then, connect another earth cable Ⓞ from the earth terminal Ⓝ to the air outlet duct Ⓓ.**
- **Be sure to install an air filter (procure locally) and an air outlet duct.**

10.Test run

10.1. Before test run

- **After completing installation and the wiring and piping of the indoor and outdoor units, check for refrigerant leakage, looseness in the power supply or control wiring, wrong polarity, and no disconnection of one phase in the supply.**
- **Use a 500-volt megohmmeter to check that the resistance between the power supply terminals and ground is at least 1.0 MΩ.**
- **Do not carry out this test on the control wiring (low voltage circuit) terminals.**

⚠ **Warning:**

Do not use the air conditioner if the insulation resistance is less than 1.0 MΩ.

Insulation resistance

After installation or after the power source to the unit has been cut for an extended period, the insulation resistance will drop below 1 MΩ due to refrigerant accumulating in the compressor. This is not a malfunction. Perform the following procedures.

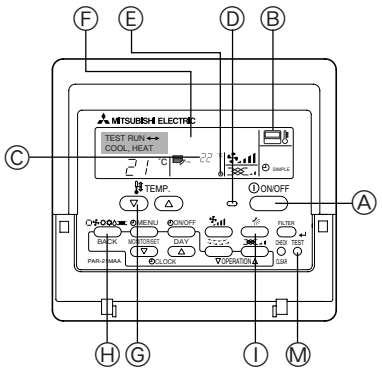
1. Remove the wires from the compressor and measure the insulation resistance of the compressor.
2. If the insulation resistance is below 1 MΩ, the compressor is faulty or the resistance dropped due the accumulation of refrigerant in the compressor.
3. After connecting the wires to the compressor, the compressor will start to warm up after power is supplied. After supplying power for the times indicated below, measure the insulation resistance again.
   - The insulation resistance drops due to accumulation of refrigerant in the compressor. The resistance will rise above 1 MΩ after the compressor is warmed up for two to three hours.
     (The time necessary to warm up the compressor varies according to atmospheric conditions and refrigerant accumulation.)
   - To operate the compressor with refrigerant accumulated in the compressor, the compressor must be warmed up at least 12 hours to prevent breakdown.
4. If the insulation resistance rises above 1 MΩ, the compressor is not faulty.

⚠ **Caution:**

- **The compressor will not operate unless the power supply phase connection is correct.**
- **Turn on the power at least 12 hours before starting operation.**

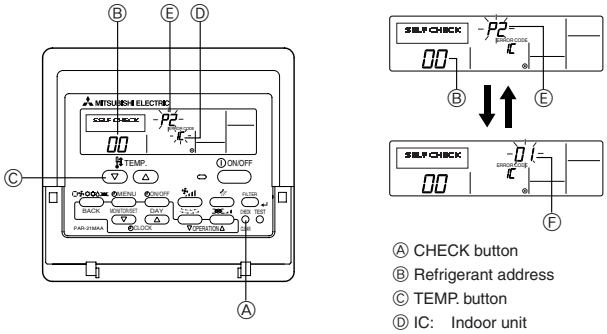
- Starting operation immediately after turning on the main power switch can result in severe damage to internal parts. Keep the power switch turned on during the operational season.

10.Test run



Ⓐ ON/OFF button
Ⓑ Test run display
Ⓒ Indoor temperature liquid line temperature display
Ⓓ ON/OFF lamp
Ⓔ Power display
Ⓕ Error code display
Test run remaining time display
Ⓖ Set temperature button
Ⓗ Mode selection button
Ⓘ Fan speed button
Ⓜ TEST button

Fig. 10-1



Ⓐ CHECK button
Ⓑ Refrigerant address
Ⓒ TEMP. button
Ⓓ IC: Indoor unit
OC: Outdoor unit
Ⓔ Check code
Ⓕ Unit address

Fig. 10-2

10.2. Test run

The following 3 methods are available.

10.2.1. Using wired remote controller (Fig. 10-1)

① Turn on the power at least 12 hours before the test run.
② Press the [TEST] button twice. ➡ "TEST RUN" liquid crystal display
③ Press the [Mode selection] button. ➡ Make sure that wind is blown out.
④ Press the [Mode selection] button and switch to the cooling (or heating) mode. ➡ Make sure that cold (or warm) wind is blown out.
⑤ Press the [Fan speed] button. ➡ Make sure that the wind speed is switched.
⑥ Check operation of the outdoor unit fan.
⑦ Release test run by pressing the [ON/OFF] button. ➡ Stop
⑧ Register a telephone number.
The telephone number of the repair shop, sales office, etc., to contact if an error occurs can be registered in the remote controller. The telephone number will be displayed when an error occurs. For registration procedures, refer to the operation manual for the indoor unit.

10.3. Self-check

10.3.1. Wired remote controller (Fig. 10-2)

① Turn on the power.
② Press the [CHECK] button twice.
③ Set refrigerant address with [TEMP] button if system control is used.
④ Press the [ON/OFF] button to stop the self-check.

• For description of each check code, refer to the following table.

Check code	Symptom	Remark
P1	Intake sensor error	
P2	Pipe (TH2) sensor error	
P9	Pipe (TH5) sensor error	
E6, E7	Indoor/outdoor unit communication error	
P4	Drain sensor error	
P5	Drain pump error	
PA	Forced compressor error	
P6	Freezing/Overheating safeguard operation	
EE	Communication error between indoor and outdoor units	
P8	Pipe temperature error	
E4, E5	Remote controller signal receiving error	
Fb	Indoor unit control system error (memory error, etc.)	
E0, E3	Remote controller transmission error	
E1, E2	Remote controller control board error	
E9	Indoor/outdoor unit communication error (Transmitting error) (Outdoor unit)	For details, check the LED display of the outdoor controller board.
UP	Compressor overcurrent interruption	
U3, U4	Open/short of outdoor unit thermistors	
UF	Compressor overcurrent interruption (When compressor locked)	
U2	Abnormal high discharging temperature/49C worked/insufficient refrigerant	
U1, Ud	Abnormal high pressure (63H worked)/Overheating safeguard operation	
U5	Abnormal temperature of heat sink	
U8	Outdoor unit fan safeguard stop	
U6	Compressor overcurrent interruption/Abnormal of power module	
U7	Abnormality of super heat due to low discharge temperature	
U9, UH	Abnormality such as overvoltage or voltage shortage and abnormal synchronous signal to main circuit/ Current sensor error	
Others	Other errors (Refer to the technical manual for the outdoor unit.)	

*1 If the beeper does not sound again after the initial two beeps to confirm the self-check start signal was received and the OPERATION INDICATOR lamp does not come on, there are no error records.
*2 If the beeper sounds three times continuously "beep, beep, beep (0.4 + 0.4 + 0.4 sec.)" after the initial two beeps to confirm the self-check start signal was received, the specified refrigerant address is incorrect.
Check code displayed in the LCD.

This product is designed and intended for use in the residential, commercial and light-industrial environment.

The product at hand is based on the following EU regulations:

- Low Voltage Directive 73/23/ EEC
- Electromagnetic Compatibility Directive 89/ 336/ EEC

Please be sure to put the contact address/telephone number on this manual before handing it to the customer.

MITSUBISHI ELECTRIC CORPORATION
HEAD OFFICE: MITSUBISHI DENKI BLDG., 2-2-3, MARUNOUCHI, CHIYODA-KU, TOKYO 100-8310, JAPAN

BG79U787H01

Printed in Thailand